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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BROWN, TIMOTHY M	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,141	SKIADOPOULOS ET AL.	
	Examiner	Art Unit	
	Timothy M. Brown	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2003 and 13 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-129,183,232,255 and 278* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-129,183,232,255 and 278* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Non-Final Office Action is responsive to the claims filed September 18, 2003, and the Preliminary Amendment received May 13, 2004. Claims

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant human parainfluenza virus type 2 (HPIV2) comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide encoding ***PIV N protein***, classified in class 435, subclass 235.1.

II. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide *encoding* ***PIV P protein***, classified in class 435, subclass 235.1.

III. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide encoding ***PIV L protein***, classified in class 435, subclass 235.1.

IV. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide encoding ***PIV N and P proteins,*** classified in class 435, subclass 235.1.

V. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome

and a polynucleotide encoding ***PIV N and L proteins***, classified in class 435, subclass 235.1.

VI. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide encoding ***PIV P and L proteins***, classified in class 435, subclass 235.1.

VII. Claims 1-4, 6-70, 72-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***partial*** HPIV2 genome and a polynucleotide encoding ***PIV N, P and L proteins***, classified in class 435, subclass 235.1.

VIII. Claims 1-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide encoding ***PIV N protein***, classified in class 435, subclass 235.1.

IX. Claims 1-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide *encoding* ***PIV P protein***, classified in class 435, subclass 235.1.

X. Claims 1-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide *encoding* ***PIV L protein***, class 435, subclass 235.1.

XI. Claims 1-129, 255 and 278, drawn to a method for producing an infectious, self-replicating, recombinant human parainfluenza virus type 2 (HPIV2) comprising co-

expressing a ***complete*** HPIV2 genome and a polynucleotide encoding ***PIV N and P proteins***, class 435, subclass 235.1.

XII. Claims 1-129, 255, and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide encoding ***PIV N and L proteins***, classified in class 435, subclass 235.1.

XIII. Claims 1-129, 255, and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide encoding ***PIV P and L proteins***, classified in class 435, subclass 235.1.

XIV. Claims 1-129, 255, and 278, drawn to a method for producing an infectious, self-replicating, recombinant HPIV2 comprising co-expressing a ***complete*** HPIV2 genome and a polynucleotide encoding ***PIV N, P and L proteins***, class 435, subclass 235.1.

XV. Claims 183 and 232, drawn to a method for stimulating the immune system of a mammalian subject comprising administering a recombinant HPIV2, classified in class 514, subclass 888.

The inventions are distinct, each from the other because of the following reasons:

Inventions I-VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. Here, each of Inventions I-VI has utility as a method for producing a recombinant HPIV2. Thus, Inventions I-VI are may be restricted as subcombinations that are usable together.

Inventions I-VI are related to Invention VII as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the patentability of Invention VII does not rest on the use of a particular subcombination. That is, the patentability of Invention VII does not rest on the incorporation of a single subcombination. The subcombinations also have independent utility since each subcombination can be used to produce recombinant HPIV2. Thus, Ivnentions I-VI may be restricted from Invention VII as combination and subcombination.

Like Inventions I-VI, Inventions VIII-XIII are related as subcombinations disclosed as usable together in a single combination. Thus, Inventions VIII-XIII may be restricted for the reasons discussed under Inventions I-VI. .

Like Inventions I-VI and Inventin VII, Inventions VIII-XIII are related to Invention XIV as combination subcombination. Thus, Inventions VIII-XIII may be restricted from Invention XIV for the reasons discussed under Inventions I-VI and Invention VII.

Inventions I-VII are unrelated to Inventions VIII-XIV. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). Here, the specification does not disclose a method wherein a recombinant HPIV2 is produced by coexpressing partial *and* complete HPIV2 polyhexameric genomes. Morever, the inventions have different modes of operation since Inventions I-VII produce recombinant HPIV2 using a

compliementing cell line while Inventions VIII-XIV do not. Inventions I-VII are therefore unrelated to Inventions VIII-XIV.

Inventions I-XIV are unrelated to Invention XV. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). Here, the specification does not disclose using a method for producing recombinant HPIV2 in combination with a method for stimulating an immune response. Moreover, Inventions I-XIV have a different function than Invention XV; Inventions I-XIV produce an infectious HPIV2 while Invention XV induces an immune response in a subject. Inventions I-XIV are therefore unrelated to Invention XV.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

This application contains claims directed to the patentably distinct species discussed below. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

An election of one of Inventions I-VI requires a further election of one of the following attenuating mutations:

i. A temperature sensitive mutation

ii. An attenuating mutation identified in respiratory syncytial virus (RSV)

iii. Phe460 in HPIV2 L protein

iv. An attenuating mutation identified in bovine parainfluenza virus type 3 (BPIV3)

v. Ser1724-1725 in HPIV2 L protein

vi. HPIV3 JS cp45

An election of one of Inventions I-VI requires a further election of one of the following phenotype changes:

vii. Growth characteristic changes

viii. Attenuation

ix. Temperature sensitivity

x. Cold adaptation

xi. Plaque size

xii. Host-range restriction

xiii. Change in immunogenicity

An election of one of Inventions I- VI requires a further election of one of the following nucleotide modifications:

xiv. Modification of HPIV2 N

xv. Modification of HPIV2 P

xvi. Modification of HPIV2 M

xvii. Modification of HPIV2 F

xviii. Modification of HPIV2 HN

xix. Modification of HPIV2 L

xx. 3' leader

xxi. 5' trailer

xxii. Intergenic region modification

An election of one of Inventions I-VI requires a further election of one of the following HPIV2 mutations:

xxiii. Mutation in an RNA editing site

xxiv. Frameshift mutation

xxv. Alteration of a translation start site

xxvi. Introduction of at least one stop codon

xxvii. Transcription signal mutation

An election of one of Inventions I-VI requires a further election of one of the following non-PIV molecules:

xxviii. Cytokine

xxix. T-helper epitope

xxx. A restriction site marker

xxxi. A protein of a microbial pathogen

An election of one of Inventions I-VI requires a further election of one of the following heterologous gene segments:

xxxii. An extragenic 3' leader

xxxiii. An extragenic 5' trailer region

xxxiv. A gene start signal

xxxv. A gene end signal

xxxvi. An editing region

xxxvii. An intergenic region

xxxviii. A 3' non-coding region

xxxix. A 5' non-coding region

An election of one of Inventions I-IV requires a further election of one of the following heterologous PIV gene segments:

xl. PIV N protein

xli. PIV P protein

xlii. PIV V protein

xliii. PIV M protein

xliv. PIV F protein

xlv. PIV HN protein

xlvi. PIV L protein

An election of one of Inventions I-VI requires a further election of one of the heterologous pathogens in claim 31.

An election of one of Inventions I-VI requires a further election of one of the following supernumeracy heterologous genes:

xlvii. HPIV1 HN

xlviii. HPIV2 F

xlix. HPIV3 HN

l. HPIV3 F

li. Measles HA

An election of one of Inventions I-VI requires a further election of one of the following heterologous genome segment domains:

lii. Cytoplasmic

liii. Transmembrane

liv. Ectodomain

Species i-vi are unrelated. The specification does not disclose inactivating HPIV2 using a combination of the claimed attenuating mutations. Moreover, the attenuating mutations of

species i-vi have different modes of operation since they target different gene segments and therefore impact the activity of different protein regions.

Species vii-xiii are unrelated phenotype changes. These different phenotypes are not disclosed as usable together. These phenotype changes also have different modes of operation since they control HPIV2 replication through different mechanisms.

Species xiv-xxii are unrelated. The specification does not disclose producing recombinant HPIV2 using a combination of nucleotide modifications from Species xiv-xxii. Also, species xiv-xxii produce different effects since these nucleotide modifications impact different gene segments and/or proteins.

Species xxiii-xxvii are unrelated, as are Species xxxii-xxxix. In both cases, the specification does not disclose using a combination of HPIV2 mutations (Species xxiii-xxvii) or a combination of heterologous gene segments (Species and xxxii-xxxix) to produce recombinant HPIV2. These species also have different effect in that they have unique effects on gene expression.

Species xl-xlvi are unrelated, as are Species xlvii-li and Species lii-liv. The specification does not disclose using a combination of heterologous PIV gene segments (Secies xlvii-li), a combination of supernumeracy heterologous genes (Species xlvii-li), or a combination of heterologous genome segment domains (Species lii-liv). These species also produce different effects as they express distinct proteins having distinct biological activities.

Species xxviii-xxxi are unrelated. The specification does not disclose using the recited non-PIV molecules in combination to produce HPIV2. These molecules also have different effects based on the varied ways in which they impact the mammalian immune system.

The pathogen species recited in claim 31 are unrelated due to their different effects. These pathogens represent distinct antigenic peptides that produce vastly different immunological responses.

Conclusion

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The examiner has required restriction between product [1] and process claims(Invention XV). Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

[1] Inventions I-XIV incorporate the recombinant HPIV2 of claims 67-70, 72-129, 255, and 278.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Brown whose telephone number is (571) 272-0773. The examiner can normally be reached on Monday - Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on (571) 272-0902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy M. Brown
Examiner
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James C. Housel 12/26/05

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